

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference PA-04043/PCT	FOR FURTHER ACTION	See item 4 below
International application No. PCT/JP2004/016385	International filing date (<i>day/month/year</i>) 28 October 2004 (28.10.2004)	Priority date (<i>day/month/year</i>) 29 October 2003 (29.10.2003)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant SHOWA DENKO K. K.		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 740 14 35	Date of issuance of this report 01 May 2006 (01.05.2006) Authorized officer <div style="text-align: center; font-weight: bold; font-size: 1.2em;">Masashi Honda</div> Telephone No. +41 22 338 70 10
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PATENT COOPERATION TREATY

REC'D 17 MAR 2005

WIPO PCT

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

SHIMIZU Hisayoshi

**Idemitsu Nagahori Bldg.,
4-26, Minamisemba 3-chome,
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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year)

15. 3. 2005

Applicant's or agent's file reference
PA-04043/PCT

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/JP2004/016385

International filing date (day/month/year)

28.10.2004

Priority date (day/month/year)

29.10.2003

International Patent Classification (IPC) or both national classification and IPC

Int.Cl.⁷ **H01G9/08 H01G9/00**

Applicant

SHOWA DENKO K.K.

1. This opinion contains indications relating to the following items:



Box No. I

Basis of the opinion



Box No. II

Priority



Box No. III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability



Box No. IV

Lack of unity of invention



Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement



Box No. VI

Certain documents cited



Box No. VII

Certain defects in the international application



Box No. VIII

Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Date of completion of this opinion

23.02.2005

Name and mailing address of the ISA/JP

Japan Patent Office

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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/016385

Box No. I

Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
☐ table(s) related to the sequence listing

b. format of material

- ☐ in written format
☐ in computer readable form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2004/ 016385

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-31</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>16, 18</u>	YES
	Claims	<u>1-15, 17, 19-31</u>	NO
Industrial applicability (IA)	Claims	<u>1-31</u>	YES
	Claims		NO

2. Citations and explanations

[Cited documents]

1. Microfilm of the specification and drawings annexed to the written application of Japanese Utility Model Application No.056980/1979(Laid-open No. 156431/1980) (Nippon Chemi-Con Corporation), 1980.11.11, whole document, Fig.1-2(Family none)
2. JP 2002-015954 A(Kyocera Corporation)2002.01.18, paragraph [0022](Family none)
- 3.JP 2002-110479 A(Nippon Chemi-Con Corporation)2002.04.12, claims, paragraph [0016]-[0018], Fig.1(Family none)
- 4.JP 05-243102 A(Matsushita Electric Industrial Co., Ltd.)1993.09.21,claims,paragraph [0011]-[0012], Fig.1-2(Family none)
- 5.Microfilm of the specification and drawings annexed to the written application of Japanese Utility Model Application No.182823/1983(Laid-open No.090828/1985) (SANYO Electric Co.,Ltd.), 1985.06.21, claim, Fig.3-4(Family none)
- 6.WO 2001/076865 A(Mitsubishi Plastics, Inc.)2001.10.18,claims&CN 1436122 A

[Claims 1-15,17,19-31]

The document 1 is considered to represent the closest prior art for the subject matters of claims 1-15,17,19-31.

The document 1 discloses

" An electrolytic capacitor, comprising an external casing;
a capacitor element enclosed in the external casing; and
a heat conductive material consists of alumina particles (a particle diameter is 3 - 4 μ m)
and polypropylene ,

wherein the heat conductive material is disposed between the external casing and the capacitor element so as to be in contact with the external casing and the capacitor element.

and a content rate of the particle in the heat conductive material is 50-75mass%. "

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:

The document 2 discloses

" Alumina or aluminum nitride has heat conductivity of $3\text{W/m}\cdot\text{K}$ or more and can be used as a heat conductive material in the field of electrolytic capacitor.

And Silicone has heat conductivity of $1\text{W/m}\cdot\text{K}$ or more and can be used as a heat conductive material."

And the document 3 discloses

" The heat conductive material consists of silicone oil or denatured silicone oil, wherein the heat conductive material is disposed between the external casing and the capacitor element."

Hence the subject matters of claims 1-13 do not appear to involve an inventive step in view of the document 1-3 cited in the ISR.

Furthermore, the document 4,5 discloses

" An electrolytic capacitor, comprising:
an external casing made of aluminum; and
a capacitor element enclosed in the external casing,
wherein an external peripheral surface of the external casing is covered with an insulation film."

And "An external peripheral surface of the external casing is covered with an anodic oxide formed by surface treatment " is disclosed in the document 6.

Therefore the subject matters of claims 14-15,17,19-31 do not appear to involve an inventive step in view of document 1-6.

[claims 16,18]

The subject matters of claims 16,18 are neither disclosed in any of the documents cited in the ISR nor obvious to a person skilled in the art.